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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PE643		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IT 03/00653		International filing date (day/month/year) 22.10.2003	Priority date (day/month/year) 22.10.2003
International Patent Classification (IPC) or both national classification and IPC E01F7/04			
Applicant OFFICINE MACCAFERRI S.P.A. et al.			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 4 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input checked="" type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 19.05.2005		Date of completion of this report 20.02.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Ritter, F Telephone No. +49 89 2399-2387 	

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 03/00653

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-18 received on 30.09.2005 with letter of 27.09.2005

Drawings, Sheets

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 03/00653

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
☒ the parts relating to claims Nos. 1-12,15-18 .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12,15-18
	No: Claims	
Inventive step (IS)	Yes: Claims	1-12,15-18
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-12,15-18
	No: Claims	

2. Citations and explanations

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IT 03/00653**

see separate sheet

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Re Item IV

Lack of unity of invention

This Authority considers that there are 2 inventions covered by the claims indicated as follows:

- I: Claims 1 to 12 and 15 to 18 directed to a protective wire net and its use
- II: Claims 13, 14 and 15 to 18 directed to a protective wire net and its use

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

Independent claim 1:

The prior art has been identified as document US-A-6 279 858 (D1) and discloses in fig. 8 a protective wire net according to the preamble of claim 1.

It follows that the following technical features of claim 1 make a contribution over the prior art and can be considered as special technical features within the meaning of Rule 13.2 PCT:

The protective wire net further comprises one or more longitudinal metal cables each intertwined or interlaced with at least one adjacent longitudinal wire.

The problem solved by these special technical features can therefore be construed as:
A higher tensile strength of the net in the longitudinal direction is achieved, which enables protective structures to be constructed without additional cables superimposed on the net.

Independent claim 13:

The expression "intertwined or interlaced" in claim 13 has to be interpreted as also including the term "woven" (see fig. 4 of the application; wire 34 is woven into the net, but not bent around the longitudinal wires).

Due to this interpretation, document D1, which has been identified as closest prior art, discloses in fig. 8 read together with the passage in column 1, lines 12-44 and especially lines 32-36 a protective wire net according to the preamble of claim 13.

It follows that the following technical features of claim 13 make a contribution over the prior

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IT 03/00653

art and can be considered as special technical features within the meaning of Rule 13.2 PCT:

The protective wire net further comprises anchoring means for anchoring one or more transverse wires and/or metal cables to one or more of the longitudinal wires.

The problem solved by these special technical features can therefore be construed as:
Facilitating the connection of transverse wires and/or metal cables to the longitudinal wires.

Conclusion:

Neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define 2 different inventions not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US-A-6 279 858

2. Independent claim 1:

Document D1, which is considered to represent the closest prior art, discloses in fig.

8 a protective wire net according to the preamble of claim 1.

By the provision of longitudinal cables intertwined with at least one adjacent longitudinal wire, a higher tensile strength of the net in the longitudinal direction is achieved, which enables protective structures to be constructed without additional cables superimposed on the net.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IT 03/00653

D1 teaches a reinforcement of the net by straining stranded wires above the wire netting or by weaving stranded wires into the netting. An intertwining of the cable with an adjacent wire is not suggested.

The subject-matter of claim 1 is new and inventive (Article 33(2) and 33(3) PCT).

3. Dependent claims 2 to 12 and 15 to 18:

Claims 2 to 12 and 15 to 18 show further embodiment of the wire net according to claim 1. Claims 15 to 18 relate to a protective structure including a wire net according to any of claims 1 to 12, and claim 18 to the use of a wire net according to any of claims 1 to 12.

Therefore, the subject-matter of these claims is considered to be new and inventive (Article 33(2) and 33(3) PCT).

4. Remarks:

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

DRAFT

10

CLAIMS

1. A protective wire net comprising an array of longitudinal wires (12) arranged side by side and each intertwined with at least one respective adjacent longitudinal wire (12), characterized in that it further comprises one or more longitudinal metal cables (14) each intertwined or interlaced with at least one adjacent longitudinal wire (12).

2. A protective wire net according to Claim 1, characterized in that the one or more longitudinal metal cables (14) are interposed between the array of longitudinal wires (12).

3. A protective wire net according to Claim 2, characterized in that it comprises a plurality of the said longitudinal metal cables (14) arranged at regular intervals relative to one another and alternating with one or more wires (12).

4. A protective wire net according to any one of the preceding claims, characterized in that at least one of the longitudinal metal cables (14) defines an edge of the net.

~~5. A protective wire net comprising an array of longitudinal wires (12) arranged side by side and each intertwined with at least one respective adjacent longitudinal wire (12), characterized in that it further comprises one or more transverse wires (34) and/or metal cables (16) arranged in a transverse direction relative to the longitudinal wires (12) and outside intertwining regions (22) defined by portions (20) of adjacent longitudinal wires (12) which are bent around one another, the transverse wires (34) and/or metal cables (16) being intertwined or interlaced with one or more of the longitudinal wires (12).~~

BRIEF DESCRIPTION OF DRAWINGS

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11

5 6. A protective wire net according to any of the preceding ~~one of Claims 1 to 4~~, characterized in that it further comprises ~~the characteristics defined in Claim 5~~ one or more transverse wires (34) and/or metal cables (16) arranged in a transverse direction relative to the longitudinal wires (12) and outside intertwining regions (22) defined by portions (20) of adjacent longitudinal wires (12) which are bent around one another, the transverse wires (34) and/or metal cables (16) being intertwined or interlaced with one or more of the longitudinal wires (12).

7. A protective wire net according to Claim 6, characterized in that it comprises anchoring means (18) for anchoring one or more transverse wires (34) and/or metal cables (16) to one or more longitudinal wires (12) and/or longitudinal metal cables (14).

8. A protective wire net according to ~~any one of Claims 1 to 7~~, characterized in that the anchoring means (18) comprise at least one ring or eye, or a portion of longitudinal and/or transverse cable (14, 16) that is bent and secured to itself in order to form a loop-like element (42), which is provided on the longitudinal and/or transverse metal cables (14, 16) and through which at least one longitudinal wire (12) or one longitudinal or transverse metal cable (14, 16) extends.

6 9. A protective wire net according to ~~any one of Claims 5 6 to 8~~, characterized in that the transverse cables (16) comprise bent portions of the longitudinal cables (14).

9. A protective wire net according to claim 8, characterized in that it further comprises coupling means (42) so as to couple, in use, the wire net to other

protective wire nets.

10. A protective wire net according to claim 9, characterized in that the coupling means comprises one of the following elements: rings, clips, cables, or equivalent means.

11. A protective wire net according to claim 9, characterized in that the coupling means comprises coupling elements formed directly on one or more transverse cables (16).

12 ~~10~~. A protective wire net according to any one of the preceding claims, characterized in that it is a double-twist net with hexagonal meshes.

13. A protective wire net comprising an array of longitudinal wires (12) arranged side by side and each intertwined with at least one respective adjacent longitudinal wire (12), one or more transverse wires (34) and/or metal cables (16) arranged in a transverse direction relative to the longitudinal wires (12), the transverse wires (34) and/or metal cables (16) being intertwined or interlaced with one or more of the longitudinal wires (12), characterized in that it further comprises anchoring means (18) for anchoring one or more transverse wires (34) and/or metal cables (16) to one or more of the longitudinal wires (12).

14. A protective wire net according to claim 13, characterized in that the anchoring means (18) comprise at least one ring or eye, or a portion of longitudinal and/or transverse cable (14, 16) that is bent and secured to itself

12bis

in order to form a loop-like element (42), which is provided on the longitudinal and/or transverse metal cables (14, 16) and through which at least one longitudinal wire (12) or one transverse metal cable (14, 16) extends.

15 ~~11~~. A protective structure, characterized in that it comprises at least one protective wire net (10) according to any one of Claims 1 to ~~14~~ ~~10~~ and fixing means for fixing the net to a slope.

16 ~~12~~. A protective structure according to Claim 15 ~~11~~, characterized in that it comprises at least two of the said protective wire nets (10) joined together by coupling means (42).

17 ~~13~~. A protective structure according to Claim 16 ~~12~~, characterized in that the coupling means comprise at least one longitudinal and/or transverse metal cable (14, 16).

18 ~~14~~. Use of a protective wire net according to any one of Claims 1 to ~~14~~ ~~10~~ for the construction of a protective structure according to any one of Claims 15 ~~11~~ to 17 ~~13~~.

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AMENDED SHEET